REMARKS

Claim 1 has been amended to specify that the laser diode is a laser diode light source for emitting laser light towards the reflecting surface. Claim 1 has also been amended to incorporate the limitations of claims 2-3.

New claim 14 adds the limitation that the pulsing circuit is operable to generate pulses of electric current at a rate such that the pulsing of the laser light is not apparent to the user. Basis for this claim can be found at page 7, lines 7-8 of the specification.

No new matter has been added.

ARGUMENTS

Claim Rejections Under 35 USC 102(b).

Claims 1-6 and 10 are rejected under 35 USC 102(b) as being anticipated by Idan. It is the Examiner's position that Idan shows an optical sighting device comprising a housing, a lens having a partially reflective surface, a laser diode for emitting light toward the reflective surface, a battery, and an energizing circuit for energizing the laser diode and operable to apply a pulsating electric current from the battery to the laser diode source. The Examiner also states that Idan shows a control means for energizing the laser diode and for automatically reducing energization of the laser diode and for adjusting the intensity of the light spot and

a pulse width modulation of the laser diode. The Applicant disagrees with the Examiner's rejection for the following reasons.

Idan describes an optical sighting device for a rifle which has an LED light source and a partially reflecting lens to reflect light from the LED back into the user's eye where it is superimposed onto the light from the target. This patent therefore represents the prior art as discussed in the introduction of this case. Although the patent mentions that the device uses "a small light source, an LED for example", it does not describe or suggest the use of a laser diode. The Examiner's attention is directed to page 5 of the present application which discusses in detail the advantages of using the laser diode of the invention versus the LED used in the prior art.

In paragraph 2 of the Office Action, it appears that the Examiner is interpreting an LED as being a laser diode. This clearly is not the case and therefore, the current claims are at least novel over Idan.

In paragraph 2 of the Office Action, it also appears that the Examiner is equating the manually operable switch in the Idan system as an energization circuit, which can be used to apply a pulsing current to the laser diode.

Amended claim 1 overcomes this rejection as it clarifies the distinction between the present invention and the Idan system. Additionally, the subject matter of claims 2 and 3 has now been included in the amended claim 1.

In view of the amendments to claim 1 and the arguments set forth above, it is the Applicants view that Idan fails to anticipate claims 1, 5-6 and 10. Accordingly, it is respectfully requested that the rejection of these claims under 35 USC 102(b) be withdrawn.

Claim Rejections Under 35 USC 103(a).

Claims 8-9 and 11-13 are rejected under 35 USC 103(a) as being obvious over Idan. The Examiner states that Idan does not disclose the particularly claimed sensors stated in claims 8-9 and 11-12. The Examiner then states that these sensors are "considered to be nothing more than a choice of engineering skill, choice or design". The Examiner further states that the claimed sensors/detectors are well known alternative types of sensors/detectors than those taught by Idan.

The Applicant disagrees with the Examiner's position and respectfully requests that the Examiner provide art which supports her position that these sensors are "well known alternative types of sensors" in the art and/or provide scientific reasoning which would support this position. It appears that the Examiner is using impermissible hindsight to state that the use of different types of sensors for sensing different things and for taking a different action is no more than a choice of engineering skill, choice or design.

In particular, Idan discloses the use of a photocell for detecting the ambient light and for varying the intensity of the light spot in dependence upon the sensed ambient light conditions. Idan does not disclose or suggest the systems claimed in claims 8, 9, 11 or 12 in which the control means de-energizes the laser diode in response to the sensed signal. This appears to be a completely different result from the system described in Idan in which the sensed signal is only used to vary the intensity of the light and not used to switch it on or off (which is the purpose of the manual switch 16 in the Idan system).

With respect to claim 13, Idan is directed to the use of an LED light source. The present invention teaches the use of a laser diode which differs from an LED as discussed above. Thus, since the prior art teaches a different light source (i.e. different condition) than the present invention, the Examiner's rationale that "where the general conditions of a claim are disclosed, discovering the "optimum range" involves only routine skill in the art" is in error. The general conditions of claim 1 are not disclosed by Idan.

In view of the arguments set forth above and the Examiner's failure to cite relevant art to support her position, it is the Applicants view that Idan fails to render obvious claims 8-9 and 11-13. Accordingly, it is respectfully requested that the rejection of these claims under 35 USC 103(a) be withdrawn.

Claim 7 is rejected under 35 USC 103 (a) as being obvious over Idan in view of Bindon et al. The Examiner relies upon Bindon et al as teaching a sighting device comprising an LED having a control means that it manually or electronically controlled and the electronically controlled being considered a time-out circuit since a predetermined period can be pre-set in order to operate the device.

The Examiner's use of Bindon et al in this respect is not understood. Bindon et al do not describe or suggest a time out circuit as claimed in claim 7. All Bindon et al mention is that the brightness of the light spot can be varied manually or electronically. This in no way suggests a time out circuit as suggested by the Examiner.

Bindon et al disclose a telescopic sight having a fiber optic post the end of which is cut to provide two generally triangular or semi-elliptical surfaces which are arranged to define an inverted V shape. The end of this optical fiber is located on the optical axis of the sight. The patent mentions the use of a tritium lamp to provide light for passing down the optical fiber. A tritium lamp is a gas discharge type lamp and not a laser diode. Therefore, again this patent does not seem relevant to the present invention.

In view of the arguments set forth above, it is the Applicant's view that Idan as modified by Bindon et al fail to render claim 7 obvious. Accordingly, it is respectfully requested that the rejection of claim 7 under 35 USC 103(a) be withdrawn.

Prior Art Made Of Record.

The Examiner has cited several references of interest which she considers pertinent to the present invention. The following discusses these references in detail and how the present invention differs therefrom.

US 6,061,945 (Wallace et al)

This patent describes a combined night and day sight for a weapon and addresses the problem that with the prior art day/night sights, the image from the day and night channels are projected onto different parts of a reticle (which may have a cross-hair thereon). The system described in this patent proposes an alignment element that substantially eliminates this problem. This patent is not concerned with the type of retlective "red-dot"-type sight of the present invention.

US 5,351,429 (Ford)

This US patent describes a handgun having a laser sighting device. The laser sight is of the type that emits the laser beam towards and onto the target and not one which reflects the laser beam into the user's eye where it is combined with the image of the target. Again, it therefore seems that this patent is arguably not relevant to the present invention. It seems as the prior art that uses laser diodes fall into two categories: those that output the laser beam to the target and those that use a hologram. If those

skilled in the art had considered modifying Idan to include the laser diode of Ford, then they would have also removed the semi-reflective coating so that the laser beam would have been output towards the target, since this is what Ford teaches.

US 5,901,452 (Clarkson)

This US patent describes a gun sight which used a "Heads-Up Display" type sighting system. The device described in this patent uses a cube having a 45° beam splitter. The light source is located at the base of the cube and light is emitted into the cube through the beam splitter onto a reflector. The reflected light then passes back into the cube and is reflected off the 45° beam splitter where it is directed towards the eye and combined with light from the target.

This patent has an interesting introduction in which it describes the use of reflecting type sights like the one used in the present invention and a holographic type sight in which light is directed towards the user's eye through a hologram. The patent mentions that the reflection type use LEDs while the holographic type systems use laser diodes (see column 2, lines 16 to 48). With regard to the holographic type sights, it can be argued that these are a very different type of sight which rely on different principles of operation and hence it would not have been obvious to those skilled in the art of the reflective type sight to look to the holographic sight for solution to the problem addressed by the present invention.

Light of specific frequency and constant phase shift is called coherent light. In order to create a hologram, a coherent light source is needed since the image is created by the phase shift of the light. In the beginning the bulky gas lasers were used as light sources to create holograms, but when the small sized semiconductor laser diodes were developed, these devices took over. In the US patent 5,483,362 it is necessary to use a semiconductor diode laser since both the large size and the large power consumption of gas lasers would make the sight less useful.

For red dot sights the common light source diameter size of the aiming dot is between 60 μm and 200 μm. The source diameter of Applicant's currently used LED source has a diameter of 84 μm Therefore, it would be unlikely to use a laser diode as light source since the active size of the laser diode is only approximately 1 μm x 3 μm. However, it was surprisingly found that the eye perceives it larger and that the laser diode therefore could be used as a light source in a red point sight.

Therefore, it is Applicant's position that holographic sights are very different to the reflection type sights of the present invention and that it would not have been obvious to take features from the holographic sight and use them in a reflecting type sight.

Conclusion

In view of the foregoing arguments and amendments, Applicant believes that the application meets all applicable statutory and regulatory requirements. Accordingly, Applicant respectfully requests allowance of all claims remaining in the application.

In the event the Examiner has further difficulties with the examination and/or allowance of the application, she is invited to contact the undersigned agent for applicant by telephone at (412)380-0725, if necessary to resolve any remaining questions or issues by interview and/or Examiner's Amendment as to any matter.

Respectfully submitted,

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Marked-up copy of claim 1 ***Appendix A***

1. Optical sight comprising:

an elongate housing defining a light channel;

a lens located at one end of the light channel and having a partially reflecting surface;

a laser diode light source for emitting laser light towards said reflecting surface to produce a light spot by direct imaging of said laser diode on said reflecting surface, said light spot being superimposed on a target when sighting through the light channel from an opposite end thereof;

a battery for providing electric current;

an energizing circuit for energizing said laser diode [,operable to apply a pulsating electric current from said battery to said laser diode source for causing the laser diode to emit pulses of light] to cause the laser diode to emit laser light;

a switch for connecting said battery to said energizing circuit, wherein said energizing circuit comprises a pulsing circuit arranged to receive said electric current from said battery when said switch connects said battery to said energizing circuit and to generate therefrom pulses of electric current for output to said laser diode for causing the laser diode to emit pulses of laser light; and

control means for adjusting the intensity of the light spot, said control means being operable to control said pulsing circuit in order to vary a length of time of each pulse of electric current that is output to the laser diode.